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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

CHAWAN, SHEELA C

ART UNIT PAPER NUMBER

2625

DATE MAILED: 07/14/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/974,792

Applicant(s)

SUN, HUNG-MING

Examiner

Sheela C. Chawan

Art Unit.

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 December 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-14 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.

- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

1. Applicant's amendment filed on Dec 29, 2004 has been entered and made of record.

Claims 1-14 are pending in the application.

In response to applicant's submission of specification is accepted.

Response to Arguments

2. Applicant's arguments see page 3, lines 19- 21 of the remarks, filed Dec 29, 2004 with respect to rejection of claims 1-14 under 102(e) have been fully considered and are persuasive. The 102(b) rejection of claims 1-14 has been withdrawn.

Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of Aggarwal et al., (US 6,408,293 B1).

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of

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the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 1038 and potential 35 U.S.C. 102(f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1- 3, 5-7, 9-12 and 14, are rejected under 35 U.S.C. 103(a) as being unpatentable over Aggarwal et al., (US 6,408,293 B1), in view of Aya Soffer et al., "Pictorial Query Specification for Browsing Through Spatially-Referenced Image Databases", December 26, 1999, Journal of visual languages and computing, Pages 1-26.

As to claim 1, Aggarwal discloses a method of interactive image retrieval based on user, specified regions (column 4, lines 41- 67), comprising:

providing a sample image (fig 5A the image is segmented into regions);

dividing the sample image into a plurality of regions (fig 4, item 401, 406, column 4, line 13 through column 5, line 2);

selecting one or more sample regions for feature extraction, and defining corresponding (column 4, line 12 through column 5, line 35); and

constructing a composite query instruction based on the selected sample regions and searching the image database according to the composite query instruction (fig 4 and fig 5A, 5B, column 4, line 12 through column 5, line 35).

Aggarwal is silent about defining logic operators based on the area or region should be considered for image retrieving.

Aya Soffer discloses a pictorial query specification technique that enables the formulation of complex pictorial queries for image database. Using this technique, it is possible to specify which objects should appear in the target images as well as how many occurrences of each object are required. As the part of the pictorial specification, the user indicates the degree of desired similarity in the field of image retrieval database. Each pictorial query is composed of one or more query images. Each query image is constructed by selection the required query objects and positioning them according to the desired spatial configuration. Boolean combinations of two or more query images are also possible by use of AND and OR operators. In addition, a query image can be negated with the NOT operator in order to specify conditions that should not be satisfied by the database images that are retrieved successfully (abstract, page 4, paragraph 3).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to have modified Aggarwal to include defining logic operators based on the area or region should be considered for image retrieving. It would have been obvious to one of ordinary skill in the art at the time of the invention to have modified Aggarwal by the teaching of Aya Soffer in order to achieved by combining several query images into a compound pictorial query specification and by providing the capability of object binding in order to specify whether the same instances of an object

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is to be used in the case of a conjunction of two query images (as suggested by Aya Soffer at page 23, paragraph 7, concluding remarks).

As to claim 2, Aggarwal discloses the method comprising selecting the images that contain the regions corresponding with the composite query instruction (column 1, line 66 through column 2, line 40).

As to claim 3, Aggarwal discloses the method wherein the step of dividing the sample image into a plurality of regions uses an edge detection method to divide the sample image into a plurality of regions (column 4, lines 41-67, column 5, lines 1-2, 25-35).

As to claim 5, Aggarwal discloses the method wherein the step of dividing the sample image into a plurality of regions uses a region splitting and merging method to divide the sample image into a plurality of regions (column 3, line 57 through column 4, line 11, 20- 67, column 5, lines 25- 35).

As to claim 6, Aggarwal discloses the method wherein the step of dividing the sample image into a plurality of regions uses a region growing method to divide the sample image into a plurality of regions (regions (column 3, line 57 through column 4, line 11, 20- 67, column 5, lines 25- 35).

As to claims 7 and 12, Aggarwal discloses the method wherein the image features include color distribution, texture, position and shape (column 1, lines 16-29, column 3, line 57 through column 4, lines 11-40, column 5, lines 25-34).

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As to claims 9 and 14, Aggarwal discloses the method wherein the logic operators include "and", "or", "exclusive-or" and "not" (abstract, page 4, paragraph 3, page 23, paragraph 7, concluding remarks).

As to claim 10, see the rejection of claim 1 above.

As to claim 11, Aggarwal discloses the method comprising selecting the images that contain the regions corresponding with the composite query instruction (fig 4 and fig 5A, 5B, column 4, line 12 through column 5, line 35).

4. Claims 4, 8 and 13, are rejected under 35 U.S.C. 103(a) as being unpatentable over Aggarwal et al., (US 6,408,293 B1), in view of Aya Soffer et al., "Pictorial Query Specification for Browsing Through Spatially-Referenced Image Databases", December 26, 1999, as applied to the above claims 1-3, and further in view of Ganapathy et al., (US.6,411,953 B1).

Aggarwal discloses a retrieval of multimedia data images, video and audio from a database and, more particularly, to a system which understands the user's perception from the query object(s) itself via user interaction, thereby increasing the relevance of the data retrieved from the database, and subsequently increasing the speed of retrieval of the objects of interest. Aggarwal is silent about color quantization method.

Ganapathy discloses a method of interactive image retrieval based on user specified regions, the regions are specified based on Luminance and Chrominance components which are used for the extraction of color –based information. The system comprises of:

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wherein the step of dividing the sample image into a plurality of regions uses a color quantization method to divided the sample image into a plurality of regions (column 8, lines 47- 67, column 9, lines 5- 29).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify Aggarwal to include color quantization method. It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Aggarwal by the teaching of Ganapathy in order to achieve a major advantage of a pattern retrieval and matching system. Furthermore, the invention is suitable for use in a wide variety of pattern domains, including art, photography, digital museums, architecture, interior design, and fashion (as suggested by Ganapathy at column 1, lines 6 - 10).

As to claims 8 and 13, Ganapathy discloses the method wherein the image features include tone, brightness (column 5, lines 45- 55, column 11, lines 19- 28) and chromatic saturation (column 17, line 47 through column 18, lines 1-5).

Other prior art cited

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Kanevsky et al., (US. 6,434,520 B1) discloses system and method for indexing and querying audio archives.

Wang et al., (US. 5,802, 361) discloses method and system for searching graphic images and videos .

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Shin et al., (US. 6, 389,417 B1) discloses method and apparatus for searching a digital image.


Smith et al., (US. 6, 819, 797 B1) discloses method and apparatus for classifying and querying temporal and spatial information in video.

Contact Information

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sheela C Chawan whose telephone number is. 571-272-7446 The examiner can normally be reached on Monday - Friday 7.30 - 4.00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bhavesh Mehta can be reached on 571-272-7453 . The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Sheela Chawan
Patent Examiner
Group Art Unit 2625
July 7, 2005